



The State of QuickTime in 2002

Session 600





The State of QuickTime in 2002

Tim Schaaff
Vice President of All the Fun Stuff



QuickTime 5



1 Year
100 Million



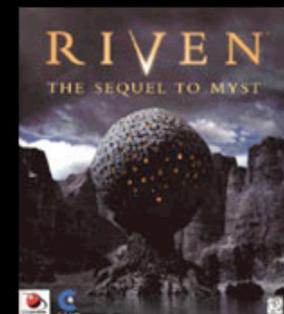
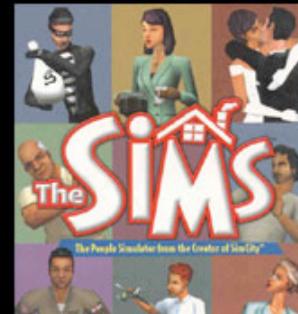
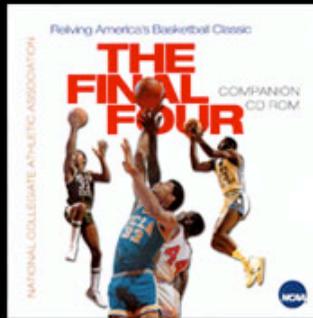
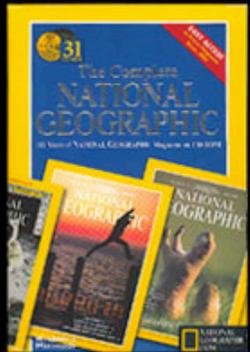
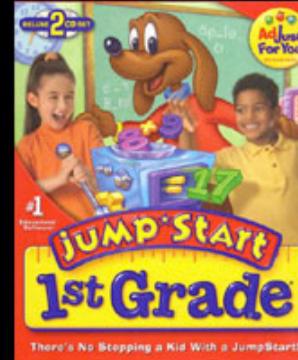
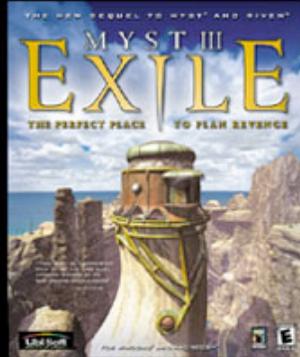
QuickTime Is Everywhere



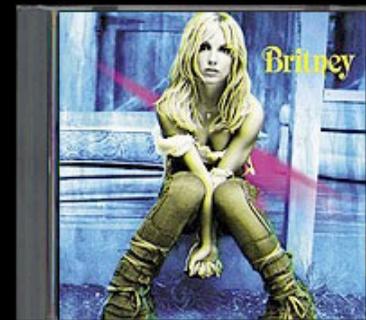
Thousands of Applications



Tens of Thousands of Titles



Thousands of Enhanced Music CDs



More Than 160 Digital Cameras



1,350,000

QuickTime Page Views Per Day



300,000+

New Installs Per Day



28,000 Web Sites Per Day



HONDA



www.weather.com



macromedia



LEXUS



YAMAHA

RollingStone.com

NOKIA

washingtonpost.com

GREENPEACE

SONY
MUSIC

CNN.com.

HBO



United Way

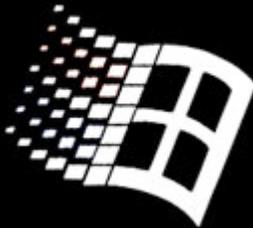


UNIVERSITY
of VIRGINIA
LIBRARY



QTSS Momentum

Over 400,000 Downloads



It All Started With a Simple Idea



A Modest Beginning



One Idea Led to Another . . .

- Video
- Audio
- Animation
- Media capture
- Editing
- Cross-platform publishing
- Text
- Virtual reality
- 3D
- Vector graphics
- Web integration
- Interactivity
- Streaming
- Skins
- And on and on and on . . .



The Big Idea



Performance: 1991–2002

			
Model	LC	G4 Tower	
CPU	16 MHz	Dual 1 GHz	125X
RAM	2 MB	512 MB	256X
Disk	40 MB	80 GB	2000X
Cost	\$2500	\$2999	1.2X
Video	90 KB/Sec	20 MB/Sec	222X





Demo

Tom Dowdy
QuickTime Sous Chef

QuickTime in Mac OS X

Latest QuickTime technologies are built into Jaguar

- QuickTime 6
- QuickTime Streaming Server 4
- QuickTime Broadcaster



terminal



terminal
extreme



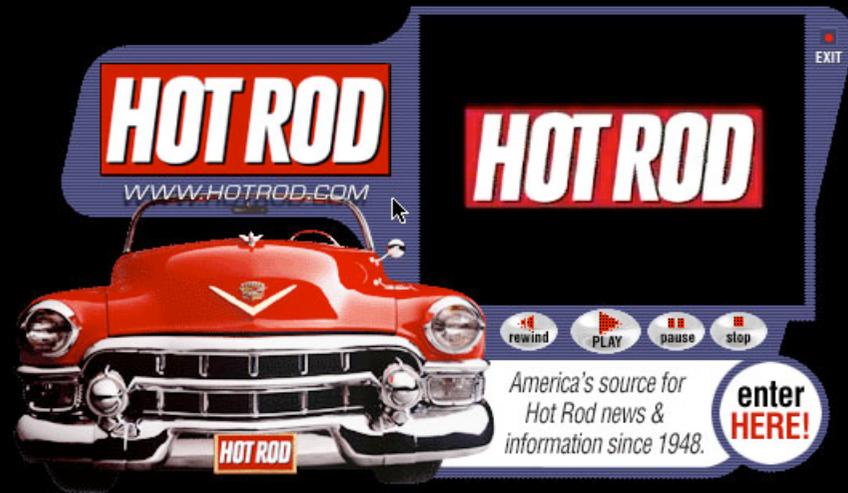


+



Media Skins

- Customized movie interfaces
- Non-rectangular windows
- Device-like user interface
- Easy to create





Demo



QuickTime 6



New in QuickTime 6

- MPEG-4 video
- AAC audio
- Instant-on streaming
- VBR audio encoding
- MPEG-2 decode
- Flash 5
- DVC Pro PAL
- Revamped imaging engine
- New content channel UI
- Enhanced AppleScript support
- JPEG 2000
- Carbon Event Manager
- Idle Manager
- Movie Manager
- Improved NSMovie classes
- IIDC camera support
- SeqGrab dialog enhancements
- Effects dialog enhancements
- Reliable transport



MPEG-4



MPEG-4 Technologies

Scene Description

Interactivity

Synchronization

MPEG - J
(Java)

Audio
General
Speech
Synthetic Speech
Synthetic Audio

Visual
Video
Still Images
Text
2D Graphic
3D Graphic
Face and Body Animation

Intellectual Property Management and Protection

File Format
(QuickTime)

Data Transport
(Flexmux/Transmux)



THOMSON MULTIMEDIA

 National
Semiconductor

 TELECOM LAB
ITALIA

sgi™



Lucent Technologies



SONY

SIGMA DESIGNS®

HITACHI


NetworkAppliance®

PHILIPS

CISCO SYSTEMS


entriq®

ISMA

OKI

macrovision®

bitband

 Sun
microsystems

IBM


i v a s t




kasenna

 packetvideo™

envivio.

AOL Time Warner

 Dolby

Streaming21™

NEOMAGIC
CORPORATION



 optibase

Other Bodies Using MPEG-4?

3GPP, 3GPP2

Motion JPEG 2000

ARIB

Digital Radio Mondiale

MPEG-7

MPEG-21



Apple's Implementation



MPEG-4 Video

- First-class citizen in QuickTime
- Interoperability with ISMA member companies
- G4 Velocity Engine accelerated
- Optimized on G3
- Single-pass VBR encoder
- Highly-tuned color management
- Accurate and fast motion estimator
- High-performance quantizer
- Deblocking filter in decode



AAC Audio

- Dolby signal processing
- Velocity Engine accelerated
- True VBR audio encoding



Full QuickTime Integration

- File format support
- Importer
- Exporter





Demo

MPEG-4 Licensing



Two Pennies for Your Thoughts



Cautiously Optimistic



MPEG-4 Licensing



JPEG 2000

- 30% more efficient than JPEG
- Supports both lossy and lossless compression
- Wavelet-based (vs. DCT-based for JPEG)
- Better color fidelity
- Region of interest
- Multiple resolutions in a single file
- Working towards a royalty-free model





Demo



QuickTime 6





QuickTime Streaming Server 4



“After we spent weeks in arduous testing and watching our favorite movie over and over, our numbers showed that Apple’s Darwin Streaming Server and QuickTime 5 Player package deserves top honors. Apple proved it could deliver a robust server and client that performed well. Its images beat the competition over a range of bandwidths. Best of all, the software is free, regardless of which operating system you’re running.”

– *Network Computing Review, April 2002*



QTSS 4 Features

- Native MPEG-4 streaming
- MP3 audio streaming
- New, easy-to-use interface
- Improved Skip Protection
- Instant-on streaming
- Performance enhancements



[Main](#)[Connected Users](#)[Relay Status](#)[General Settings](#)[Port Settings](#)[Relay Settings](#)[Log Settings](#)[Playlists](#)[Error Log](#)[Access History](#)[Log Out](#)

General Settings

Media Directory:

This is the master directory where all of your media is stored.

Secure Administration (SSL): Enabled

Max. Number of Connections:

Max. Throughput: Mbps

Default Authentication Scheme:

Start Server at System Startup: Enabled

[➔ Change Admin Username/Password...](#)

[➔ Change MP3 Broadcast Password...](#)



Instant-On





Demo



QuickTime Streaming Server 4





Live Broadcasting



Live Broadcast Is Hard

- Camera support is limited and often finicky
- Tools and setup are complex
- Network connectivity issues
- Hardware demands high



DV Is Great, But . . .



IIDC Cameras

- FireWire spec for digital cameras
- Delivers uncompressed YUV
- Inexpensive
- Or very high quality
- Flexible image sizes
- Flexible frame rates
- Well-defined camera controls
- About a hundred models to choose from





Demo

IIDC Is Built Into Jaguar





QuickTime Broadcaster



Local Area Broadcast



Broadcaster
QTSS



Enterprise Broadcast



Broadcaster

QTSS



Internet Broadcast



Broadcaster



Broadcaster Features

- MPEG-4
 - All QuickTime Codecs
 - FireWire Capture
 - Reliable Transport
 - Unicast
 - Multicast
 - Relay
 - Presets
- Custom Settings
 - Statistics
 - AppleScript
 - Instant VOD
 - XML
 - WatchDog
 - Mac OS X
 - Mac OS X Server





Demo



QuickTime Broadcaster



All Built Into Jaguar

- QuickTime 6
- QuickTime Streaming Server 4
- QuickTime Broadcaster



Why QuickTime?

www.apple.com/quicktime/products



© Apple - QuickTime - Products - 100,000,001 an...
 Address: http://www.apple.com/quicktime/products/ go

[Store](#)
[iTools](#)
[iCards](#)
[QuickTime](#)
[Support](#)
[Mac C](#)

[Download](#)
[Movie Trailers](#)
[QuickTime TV](#)
[Hot Picks](#)
[Products](#)
[Developer](#)

100,000,001 and counting...

100,000,000 users can't be wrong. They've chosen QuickTime to play back, create and deliver rich multimedia experiences. What's so special about QuickTime? Why should you and your organization use QuickTime? Why should you enhance your web site with QuickTime? Here are just a few of the reasons why QuickTime is the platform of choice for multimedia and web designers, producers and distributors.

[QuickTime](#)
[Streaming Server](#)
[Tools](#)
[Tutorials](#)
[Services](#)
[Logos & Licensing](#)

1 QuickTime is Everywhere

QuickTime 5 has been downloaded over [100 million times](#) by both Windows and Mac customers in its first year. Every day, more than 300,000 people download QuickTime to view news, entertainment, movie trailers and virtual reality content on the Internet. This huge user base is equipped to view your coolest QuickTime content.

Treasure Chest of Tools



Thousands of applications use the powerful

Cameras



More than 150 digital cameras use QuickTime as a key enabling technology, with more than a third using QuickTime to capture audio and video clips. Check out featured cameras on our [Cameras page](#).

Enhanced CDs



Internet zone





QuickTime



A Couple Reminders

- Sessions all day today and Friday, Room A2
- Feedback Forum
 - Friday, 10:30am, Room J1



One Last Thing

The QuickTime Engineering Team
Is Holding a “Hands-On Lab” Everyday
From 1:00—4:00pm in Room G . . Stop By!





QuickTime



 **WWDC2002**

 **WWDC2002**

 **WWDC2002**